

CHAPTER 6. SUMMARY AND CONCLUSIONS

The U.S. Climate Change Initiative includes joint implementation and emissions trading as two important options for reducing emissions. The former calls for emissions credits to be transferred from the host to the investor country, in exchange for funds from the latter. Emissions credits, however, have to be incremental to a baseline, otherwise a host country could inflate its projections of future emissions and gain new funds for projects that would have happened anyway. For this purpose, MERV activities are needed to accurately determine the incremental emissions reductions, i.e., the net GHG benefits. A project will have non-GHG impacts as well, and in most instances MERV of these would be desirable to ensure that the project's GHG and other benefits are sustainable. The second option, emissions trading, can take place if there is a cap on emissions for each of the two trading countries. While the incrementality of emissions reduction is not a concern in this case, there is still a need to monitor the project performance in order to ensure that least-cost projects are implemented before others. MERV activities can help to ensure this outcome.

MERV guidelines are thus needed for climate change projects in order to accurately determine their net GHG, and other, benefits. Implementation of MERV guidelines is also intended to: (1) increase the reliability of data for estimating GHG benefits; (2) provide real-time data so that mid-course corrections can be made; (3) introduce consistency and transparency across project types and reporters; and (4) enhance the credibility of the projects with stakeholders (Andrasko et al. 1996; Palmisano 1996). In sum, new protocols and guidelines will be needed for turning GHG reductions into credible, internationally acceptable GHG credits that would trade at a single market price. The MERV issues discussed in this paper need to be worked out before putting a credible joint implementation or emissions trading system in place.

6.1. Existing GHG and Non-GHG Protocols and Guidelines

In this paper, we reviewed existing protocols and guidelines related to GHG reductions. We summarize our findings and discuss their attributes in Table 11. The guidelines developed by The World Bank and SGS Forestry offer the most information for the development of MERV guidelines for climate change mitigation projects. The topics that are not addressed in The World Bank guidelines (economic and social impacts and multiple reporting) could easily be incorporated in a revised guideline. While the focus of SGS Forestry's carbon offset verification service is on forestry projects, these guidelines are also useful for energy-efficiency and renewable energy projects. DOE's voluntary reporting guidelines lack

detailed information on the evaluation of GHG emission projects, but do contain references to other reports that contain this information. These guidelines, however, do not cover some of the critical issues discussed in this report, such as: economic and social impacts, precision and accuracy, persistence, institutional issues and cost.

USII's project proposal guidelines, the SBSTA's uniform reporting format, and WBCSD's project proposal guidelines are more general than the other guidelines, but ask important questions that address the topics listed in Table 11. It is up to the organizations sponsoring the projects to report on evaluation methods and on some of the topics that are of concern in this report. Winrock's carbon monitoring guidelines focus primarily on forestry monitoring approaches and are not as relevant to the other topics. Finally, although not shown in Table 11, DOE's energy measurement and verification protocol and EPA's conservation and verification protocol are also very helpful for evaluating the energy savings from energy-efficiency projects.

In summary, one or more of the protocols and guidelines examined in this paper address many of the issues that need to be covered in MERV guidelines. Most of the existing protocols and guidelines, however, generally provide only broad descriptions of the issue without providing specific recommendations on responding to these issues. The most detailed discussions focus on methodologies for calculating GHG emissions (see Table 11). For the other topics, the existing protocols and guidelines highlight the importance of the issue but rely on the user to furnish the information to the best of their ability. While this approach leads to "flexibility" (as well as relatively short protocols), the guidelines may result in inconsistent responses to what is needed. MERV guidelines could adopt this same approach, or, alternatively, offer more detailed MERV recommendations (which will inevitably lead to a longer MERV or reporting document).

Table 11. Topics Addressed by Existing GHG Protocols and Guidelines

(✓ indicates that topic is addressed in protocol)

Topics Addressed	GHG Protocols and Guidelines			
	USJI (1)	SBSTA (2)	WBCSD (3)	World Bank (4)
Carbon credits and trading	No	No	No	✓
GHG emissions	✓	✓	✓	✓
Energy efficiency	No	No	No	✓
monitoring methods				
Renewable energy	No	No	No	✓
monitoring methods				
Forestry monitoring	No	No	No	✓
methods				
Other environmental impacts	✓	✓	✓	✓
Economic and social impacts	✓	✓	✓	No
Baseline	✓	✓	✓	✓
Monitoring domain	✓	No	No	✓
Leakage	✓	✓	✓	✓
Net impacts (additionality)	✓	No	✓	✓
Self-selection bias	No	No	No	✓
Free riders	No	No	No	✓
Snapback	No	No	No	✓
Project spillover	No	No	No	✓
Market transformation	No	No	No	✓
Precision of measurement	No	No	No	✓
Confidence levels	No	No	No	✓
Sampling	No	No	No	✓
MERV frequency	No	No	No	✓
Persistence (sustainability)	✓	No	✓	✓
Multiple reporting	No	No	No	No
Verification of GHG reductions	✓	No	✓	✓
Risks and uncertainties	✓	No	✓	✓
Institutional capabilities	✓	No	✓	✓
Roles and responsibilities	✓	No	✓	✓
Qualifications	No	No	✓	✓
Manpower, training, etc.	No	No	✓	✓
Cost of MERV	✓	No	No	✓

Notes:

1. U.S. Initiative on Joint Implementation (USJI). 1996. "Guidelines for a USJI Project Proposal." U.S. Initiative on Joint Implementation, Washington, D.C.
2. Subsidiary Body for Scientific and Technological Advice (SBSTA). 1997. "Report of the Subsidiary Body for Scientific and Technological Advice on the Work of Its Fifth Session, Bonn, 25-28 February 1997. Annex III. Uniform Reporting Format: Activities Implemented Jointly Under the Pilot Phase." Framework Convention on Climate Change, United Nations.
3. World Business Council for a Sustainable Development (WBCSD). 1997. "Climate Change Projects: Guidelines for Completing Proposals." WWW page: www.wbcds.climatechange.com/home.html.
4. World Bank, 1994a. "Greenhouse Gas Abatement Investment Project Monitoring & Evaluation Guidelines." The World Bank, Washington, D.C.

Table 11 Continued. Topics Addressed by Existing GHG Protocols and Guidelines

(✓ indicates that topic is addressed in protocol)

Topics Addressed	GHG Protocols and Guidelines		
	DOE(5)	Winrock (6)	SGS Forestry (7)
Carbon credits and trading	No	✓	✓
GHG emissions	✓	✓	✓
Energy efficiency	✓	No	No
monitoring methods			
Renewable energy	✓	No	No
monitoring methods			
Forestry monitoring	✓	✓	✓
methods			
Other environmental impacts	✓	No	✓
Economic and social impacts	No	No	✓
Baseline	✓	✓	✓
Monitoring domain	✓	✓	✓
Leakage	✓	✓	✓
Net impacts (additionality)	✓	✓	✓
Self-selection bias	No	No	No
Free riders	✓	No	No
Snapback	No	No	No
Project spillover	✓	No	No
Market transformation	No	No	No
Precision of measurement	No	✓	✓
Confidence levels	✓	✓	✓
Sampling	✓	✓	✓
MERV frequency	No	✓	No
Persistence (sustainability)	No	No	No
Multiple reporting	✓	No	No
Verification of GHG reductions	No	No	✓
Risks and uncertainties	No	No	✓
Institutional capabilities	No	No	✓
Roles and responsibilities	No	No	✓
Qualifications	No	No	✓
Manpower, training, etc.	No	No	✓
Cost of MERV	No	✓	No

Notes:

5. U.S. Department of Energy (DOE) 1994b. "Sector-Specific Issues and Reporting Methodologies Supporting the General Guidelines for the Voluntary Reporting of Greenhouse Gases Under Section 1605(b) of the Energy Policy Act of 1992." DOE/PO-0028, Volumes 2 and 3, U.S. Department of Energy, Washington, D.C.
6. MacDicken, K. 1997. "Project Specific Monitoring and Verification: State of the Art and Challenges," *Mitigation and Adaptation Strategies for Global Change*, forthcoming.
7. EcoSecurities, Ltd. 1997. "SGS Forestry Carbon Offset Verification Services." Draft. SGS Forestry, Oxford, United Kingdom.

6.2. Guiding Principles

The strictness of MERV guidelines needs to be carefully considered. Strict guidelines may easily lead to burdensome and complex procedures, thereby increasing the transaction costs and reducing the cost-effectiveness of a project. However, if the guidelines for international verification are “loose”, then project sponsors might be more able to manipulate the “measured” emission reductions, e.g., inflating the net emission reductions from the project. Thus, the guidelines should not be overly burdensome but credible. There needs to be a balance between (1) the need to gather sufficient data and information to accurately measure real GHG emissions reductions and build confidence in climate change mitigation projects and (2) the need to promote efficiency by minimizing MERV burdens at all levels (Embree 1994; Heister 1996). Such a balance would limit reporting to what is necessary and reduce costs and the number of transactions among institutions and project participants.

What are the true information needs? In this paper, we have presented our list of key issues that need to be addressed. However, information needs will differ with each organization’s goals with respect to climate change mitigation projects. Based on our review of existing protocols and guidelines, we expect all organizations to support sustainable GHG emissions reductions. However, options should be available for project developers to decide how much effort should be spent in addressing each MERV issue. In our investigation, we came across several examples that the guidelines should consider for providing flexibility and reducing costs and complexity in conducting MERV activities:

1. In the beginning stages of a project, leakage and the indirect impacts of a project are likely to be modest, so that the MERV of such impacts may not be a priority. These effects are also likely to be insignificant or small for small projects and for certain types of projects. Under these circumstances, it may be justified for the guidelines to disregard these impacts and base the quantification of net GHG reductions only on GHG emissions from the project and the baseline (or comparison group). This would help reduce MERV and transaction costs. As the projects become larger, these impacts should be evaluated.
2. The amount of resources devoted to MERV activities could be based on the level of uncertainty and the amount of risk sharing. For instance, three options are available to users for estimating energy savings in DOE’s IPMVP guidelines (Section 2.2.1). EPA’s CVP provides two different general savings paths to earn credit for energy-efficiency programs (Section 2.2.3).

3. Instead of an all-or-nothing MERV system, the guidelines could offer a multi-tiered GHG crediting approach that would vary by level of precision or by the amount of resources devoted to MERV activities(Section 3.8):¹
 - a. The guidelines could recommend precise levels of measurement with high levels of confidence (e.g., 90%), or they could be more flexible: e.g., EPA's CVP uses a 75% level of confidence without specifying a level of precision, and Winrock's guidelines provide four options for addressing precision (Section 3.4).
 - b. The guidelines could recommend different MERV options. For example, EPA's CVP provides three options for verifying subsequent-year energy savings: monitoring, inspection and a default (Section 3.6). And instead of extensive monitoring and evaluation, best practical default methodologies and estimate procedures could be used (for many MERV issues), and GHG reductions could be adjusted or discounted.

6.3. Resolution of Generic MERV Issues

Some of the MERV issues are of a generic nature, whose resolution would benefit all future MERV guidelines and protocols. These issues would best be addressed through an international consensus. The consensus should:

1. Clarify, at the earliest possible date, the accepted roles and responsibilities of national governments, private businesses, nongovernment organizations, and international organizations in the joint implementation accreditation process. Clearer property rights would reduce MERV costs, by focusing these activities on the correct parties at an earlier point in time.
2. Initiate a process to certify nongovernment organizations to provide MERV services.
3. Provide guidance on the determination of a baseline. How long should a baseline remains "fixed" before a new baseline is developed? If new information becomes available after a project has been implemented, does the baseline have to remain

¹ Investors may like discounting, but governments may not prefer this option if they are interested in obtaining actual emissions reductions for meeting international protocols. On the other hand, investors may not want governments discounting their projects, because of the loss of anticipated project revenues (or carbon credits).

fixed after implementation and as specified in a certification document, or can the baseline be adjusted?

4. Decide whether MERV guidelines could exclude certain types of projects that are most likely small in scale. Also, one could specify thresholds for an accumulation of projects in the economy above which significant indirect impacts are to be expected (e.g., if 5-10% of electricity generated in a country is affected by a project).
5. Decide when a country's laws and guidelines (e.g., environmental impact statements) apply; e.g., where an investor country funds a project in a host country, do the laws of the investor country apply? or the host country? or both? And what happens if the laws from the two countries conflict?
6. Create a tribunal to resolve disputes over verification results and develop a set of MERV guidelines.

The COP and national governments should foster information exchange for joint implementation in general, and for MERV issues discussed in this report. Some progress has been made through the World Wide Web: the COP, World Bank, and national joint implementation organizations provide information on their projects, as well as project proposal criteria (e.g., a list of methodological issues being discussed in SBSTA workshops can be found on the World Wide Web: http://www.unfccc.de/fccc/ccinfo/aij_meth.htm; The World Bank's methodological work is discussed in Heister (1996) and on the World Wide Web: <http://www-esd.worldbank.org/aij/psc.htm>).

6.4. Concluding Thoughts

Some of the technical issues addressed in this paper are already being addressed in some joint implementation (JI) projects currently funded, although not consistently nor uniformly. Most joint implementation projects have not been evaluated:

"There is currently little useful information available on JI projects other than the public relations materials put out by most JI sponsors and national governments. To many people, the cost data looks suspiciously low. To others, there are real questions as to the environmental benefits associated with JI projects. To still others, there are questions as to the hidden costs associated with JI and imposed upon national regulators. Only through a thorough evaluation of JI and AIJ projects can potential generators of AIJ projects and potential purchasers of post-2000 JI projects understand what, if anything, JI offers them." (Palmisano 1996)

In conclusion, there is a need to collect, analyze, summarize and disseminate the best responses to the topics addressed in this report and currently being dealt with in climate change mitigation projects. The lessons learned in these projects should be very helpful for formulating MERV guidelines for climate change mitigation projects, which is the next phase in our project. These guidelines will be “tested” using actual climate change mitigation projects, and, when necessary, they will be revised in order to correct for systematic errors.